

## Patent claims

## 1. A switching device

- 5                   - with a strip-shaped actuator element consisting  
                  of a shape memory alloy, into which a  
                  predetermined shape has been impressed at an  
                  annealing temperature and which is connected to a  
                  movable contact part of a switching contact,  
                  and  
10                  - with means for heating up the actuator element  
                  above a temperature level bringing about an  
                  opening of the switching contact on the basis of  
                  a change in shape of the actuator element,  
                  characterized by an actuator element (2),  
15                  a) into which an at least largely extended shape  
                  has been impressed at the annealing temperature,  
                  b) which has a curved shape in the operating state  
                  in which the switching function is not triggered  
                  and  
20                  c) which rests between its one end (2a), which is  
                  held fixed, and its other end (2b), which is  
                  facing the movable contact part (4a), on a  
                  deflecting element (5) with frictional  
                  engagement in such a way that the deflecting  
25                  element (5) exerts on the concave inner side of  
                  the actuator element (2) a counterforce (G)  
                  partially counteracting the curving of the  
                  latter.
- 30    2. The device as claimed in claim 1, characterized in  
          that the actuator element (2) rests against the  
          deflecting element (5) approximately in the center  
          between its two ends (2a, 2b).
- 35    3. The device as claimed in claim 1 or 2,  
          characterized in that the actuator element (2) is  
          part of a current path and can be heated up by an

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overcurrent above the temperature level bringing  
about the opening of the switching contact.

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4. The device as claimed in claim 1 or 2, characterized in that an indirect heating-up of the actuator element (2) is provided.

5. The device as claimed in one of the preceding claims, characterized in that a restoring spring (18) keeping the actuator element (2) in its curved shape in the operating state is provided.

10 6. The device as claimed in one of the preceding claims, characterized in that the actuator element (2) is connected to the movable contact part electrically by means of a stranded wire (17) and mechanically by means of a switching linkage (14).

15 7. The device as claimed in one of the preceding claims, characterized in that the actuator element consists of a shape memory alloy based on a NiTi or CuAl alloy.

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